

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 24 and 45-53 without prejudice or disclaimer.

Please AMEND claims 2, 3, 22, 23, 25, 26, 36, and 40 and ADD new claims 54-56 in accordance with the following:

1. (Original) A device for displaying a body section in a virtual three - dimensional space by a computer comprising:

management means for managing attribute information of parts and arranging information of a set displaying plane for making a body section defined based on a plane of one of a parts;

implementing means for generating a three-dimensional section of the body cut by the set displaying plane according to the management data of the management means, and for displaying the three dimension section with the set displaying plane on the display screen; and

up-date means for up-dating the arranged information managed by the management means by corresponding to the transfer or rotation of the set displaying plane.

2. (CURRENTLY AMENDED) A device for displaying a body section in a virtual three - dimensional space by a computer comprising:

management means for managing attribute information of parts and one or plural kinds of attribute information of set displaying plane for making a body section with the relation between the parts and the ~~set displaying information~~ attribute information;

implementing means for generating a three-dimensional section of the body cut by the set displaying plane according to the management data of the management means, and for displaying the three-dimensional section with the set displaying plane on the display screen; and

up-date means for up-dating the arranged information managed by the management means by corresponding to the transfer or rotation of the set displaying plane.

3. (CURRENTLY AMENDED) A device for displaying a body section in a virtual three-

dimensional space by a computer in claim 2, where the implementing means displays an operating ~~plate~~ plane for operating the set displaying plane corresponding.

4. (Original) A device for displaying a body section in a virtual three dimension space by a computer in claim 2, where the implementing means comprises a sign board corresponding to the set displaying plane and containing character strings for distinguishing the set displaying plane and containing a relation between the set displaying pale, if there is the relation.

5. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2, where the implementing means displays the set displaying plane with the frame of the set displaying plane.

6. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2, where the implementing means displays the set displaying plane with a transparent color, when the three-dimensions section is not displayed.

7. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 6, where the implementing means displays the set displaying planes with the same transparent color, when the relation information is defined between the set planes.

8. (Original) A device for displaying a body section in a virtual three-dimension space by a computer in claim 2, where, the up-date means updates the child information with the parent information according to the change of the parent information, when the relation between the parent and child is defined;

the implementing means transfers or rotates the child plane corresponding to the transfer or rotate of the parent plane.

9. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2 comprising:

edit means for editing the relation information displayed on the screen by user interfacing with the screen.

10. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2 comprising:

generating means for generating a new set displaying plane according to a request for generating a set displaying plane issued with a designation of a plane of one of the parts by making the relation with the parts, or for generating a new set displaying plane according to a request for generating a set displaying plane issued with a designation of a registered plane by making the relation with the registered plane.

11. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 10 comprising:

second generating means for generating a new setting displaying plane containing a specific point by linking with the set displaying plane or the set displaying plane generated just before from a specific point contained in the designated set displaying plane and parts.

12. (Original) A device for displaying a body section in a virtual three-dimension space by a computer in claim 11 comprising:

third generating means generating a new set displaying by tracing path information set on a designated set displaying plane from the path information, while making a relation information with the set displaying plane.

13. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 12 comprising:

fourth generating means for generating a new set displaying plane by moving continuously the designated set displaying plane, by linking with the set displaying plane or the set displaying plane generated just before from a specific point contained in the designated set displaying plane and parts.

14. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2 comprising:

existing range setting means for setting a allowable range of existence of the set displaying plane for a set displaying plane.

15. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2 comprising:

section direction setting means for setting the section direction of a body to the set display plane.

16. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer claim 15, where the setting direction setting means sets the cutting direction of the body depending to the existing position of the set displaying plane.

17. (Original) A device for displaying a body section in a virtual three-dimension space by a computer in claim 2 comprising:

arranging means for arranging additional parts or arranging a region on the set displaying plane.

18. (Original) A device for displaying a body section in a virtual three- dimensional space by a computer in claim 2 comprising:

check means for checking an interference between one or plural of parts, which move with the set displaying plane, and another parts.

19. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 2 further comprising:

deciding means for deciding whether the two-dimensional section and the three-dimensional section are controlled with linkage or no-linkage,

when the deciding means decides the linkage control, the implementing means generates the two-dimensional section of the body cut by the set displaying plane for generating the three-dimensional section, when the deciding means decides no-linkage control, the implementing means generates the two-dimensional section cut by a set display plane selected from the set displaying planes, and displays the two-dimensional section on the same screen displaying the three-dimensional section.

20. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 19, where the implementing means displays the two-dimensions, showing the corresponding a part of the three-dimensional section.

21. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 19, where the implementing means displays the two-dimensional section and the three-dimensional section, showing a position of a designated view point.

22. (Currently Amended) A method for displaying a body section in a virtual three-dimensional space by a computer comprising:

managing management data of one or plural set displaying planes for cutting the body to make the section and of the attribute information of parts and of set displaying planes ~~wit~~ with the relation information with the parts and set displaying plane, which are made by the same data structure;

registering the management data;

displaying the section and set displaying plane with the relation information; and

~~up-dating~~ updating the managing data by arranging the relation among the parts and section made by the set displaying plane managed data by corresponding to the designation of transfer or rotation of the set displaying plane or parts ~~with considering the relation information.~~

23. (Currently Amended) A computer-readable storage medium for storing the program for controlling a computer to perform displaying a body section ~~for displaying a body section~~ in a virtual three-dimensional space, ~~where the program comprising by:~~

accessing to access a managing unit managing the management data of ~~one or plural set displaying planes for cutting the body to make the section and of the~~ attribute information of parts and the attribute information of set displaying planes ~~wit~~ with the relation information between ~~with~~ the parts and set displaying plane, which are ~~made by~~ the same data structure, wherein the attribute information of parts comprises location and posture information and the attribute information of set displaying planes comprises a direction of the plane;

~~registering the management data;~~

displaying the parts related by the managing data, ~~the section and set displaying plane and the three dimensional section of the parts cut by the set displaying plane with the relation~~ information; and

~~up-dating~~ updating the managing data by arranging the relation among the parts and the section made by the set displaying plane managed data by corresponding to the designation of transfer or rotation of the set displaying plane ~~with considering the relation~~ or parts.

24. (Cancelled)

25. (Currently Amended) A device for displaying a body section in a virtual three-dimensional space by a computer comprising:

a management unit managing attribute information of parts and one or plural kinds of

attribute information of set displaying plane for making a body section ~~with~~ by definition of the relation between the parts and the set displaying information attribute information with the same data structure for the parts; wherein the attribute information comprises location information and posture information, and the attribute information of the set displaying plane comprises direction of the set displaying plane; and

an implementing unit generating a three-dimensional section of the body cut by the set displaying plane according to the management data of the management unit-, and for displaying the three-dimensional ~~section with the set displaying plane on the display screen of a parts~~ sectional cut by the set displaying plane, the set displaying plane and the parts related to each other on the display screen; and

an ~~up-date~~ update unit ~~updating for up-dating the arranged information managed by the management unit~~ the managed data of the management unit by arranging the relation among the parts and the set displaying plane managed data by corresponding to the transfer or rotation of the set displaying plane or parts.

26. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25, where the implementing unit displays an operating ~~plate~~ plane for operating the set displaying plane corresponding.

27. (Original) A device for displaying a body section in a virtual three dimension space by a computer in claim 25, where the implementing unit comprises a sign board corresponding to the set displaying plane and containing character strings for distinguishing the set displaying plane and containing a relation between the set displaying pale, if there is the relation.

28. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25, where the implementing unit displays the set displaying plane with the frame of the set displaying plane.

29. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25, where the implementing unit displays the set displaying plane with a transparent color, when the three-dimensions section is not displayed.

30. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 29, where the implementing unit displays the set displaying planes with

the same transparent color, when the relation information is defined between the set planes.

31. (Original) A device for displaying a body section in a virtual three-dimension space by a computer in claim 25, where, the up-date unit updates the child information with the parent information according to the change of the parent information, when the relation between the parent and child is defined;

the implementing unit transfers or rotates the child plane corresponding to the transfer or rotate of the parent plane.

32. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 comprising:

an edit unit editing the relation information displayed on the screen by user interfacing with the screen.

33. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 comprising:

a generating unit generating a new set displaying plane according to a request for generating a set displaying plane issued with a designation of a plane of one of the parts by making the relation with the parts, or for generating a new set displaying plane according to a request for generating a set displaying plane issued with a designation of a registered plane by making the relation with the registered plane.

34. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 33 comprising:

a second generating unit generating a new setting displaying plane containing a specific point by linking with the set displaying plane or the set displaying plane generated just before from a specific point contained in the designated set displaying plane and parts.

35. (Original) A device for displaying a body section in a virtual three-dimension space by a computer in claim 34 comprising:

a third generating unit generating a new set displaying by tracing path information set on a designated set displaying plane from the path information, while making a relation information with the set displaying plane.

36. (Currently Amended) A device for displaying a body section in a virtual three-dimensional space by a computer in claim ~~34~~35 comprising:

a fourth generating unit for generating a new set displaying plane by moving continuously the designated set displaying plane, by linking with the set displaying plane or the set displaying plane generated just before from a specific point contained in the designated set displaying plane and parts.

37. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 comprising:

an existing range setting unit setting an allowable range of existence of the set displaying plane for a set displaying plane.

38. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 comprising:

a section direction setting unit for setting the section direction of a body to the set display plane.

39. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 38, where the setting direction setting unit sets the cutting direction of the body depending to the existing position of the set displaying plane.

40. (Currently Amended) A device for displaying a body section in a virtual three-dimension space by a computer in claim ~~35~~25 comprising:

an arranging unit arranging additional parts or arranging a region on the set displaying plane.

41. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 comprising:

a check unit checking an interference between one or plural of parts, which move with the set displaying plane, and another parts.

42. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25 further comprising:

a deciding unit deciding whether the two-dimensional section and the three-dimensional

section are controlled with linkage or no-linkage,

when the deciding unit decides the linkage control, the implementing unit generates the two-dimensional section of the body cut by the set displaying plane for generating the three-dimensional section, when the deciding unit decides no-linkage control, the implementing unit generates the two-dimensional section cut by a set display plane selected from the set displaying planes, and displays the two-dimensional section on the same screen displaying the three-dimensional section.

43. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 42, where the implementing unit displays the two-dimensions, showing the corresponding a part of the three-dimensional section.

44. (Original) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 42, where the implementing unit displays the two-dimensional section and the three-dimensional section, showing a position of a designated view point.

45. - 53. (Cancelled)

54. (NEW) A device for displaying a body section in a virtual three-dimensional space by a computer in claim 25, wherein the managing data comprises ID of the data record, name, kinds of parts, the reference plane and the set displaying plane, pointers to parents of the parts, a reference plane, fundamental positions, fundamental postures, positions relative to parents, postures relative to parents, allowable regions of existence, directs of set displaying plane

55. (NEW) A device for displaying a body section in a virtual three-dimensional space by a computer to claim 39, wherein

a set displaying plane having the same plane direction with the plane direction of a reference plane has a cross section cut with the set displaying plane displays parts existing far from the set displaying plane in direction of the reference plane, and

a set displaying plane having the reverse plane direction with the plane direction of a reference plane has a cross section cut with the set displaying plane displays parts existing within the distance from the reference plane to the set displaying plane in direction of the reference plane.

56. (NEW) A device for displaying a body section in a virtual three-dimensional space by a computer to claim 55; wherein upon plural set displaying planes having all have the same plane directions, a cut section cut with the farthest set displaying plane from the referred plane in direction of the reference plane is displayed,

upon plural set displaying planes having inverse plane directions, a cut section cut with the nearest set displaying plane from the referred plane in direction of the reference plane is displayed, and

upon one or more than one set displaying planes having the same plane direction with the reference plane and one or more than one set displaying planes having the inverse plane direction with the reference plane exist, the cross section displays parts existing between the farthest set displaying plane of the same plane direction from the reference plane and the nearest set displaying plane of the inverse plane direction from the reference plane.